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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 09/675,860
Filing Date: September 29, 2000
Appellant(s): BARRERA ET AL.

Robert Curcio
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed October 4, 2007 appealing from the Office action mailed March 8, 2007.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is substantially correct. The changes are as follows: Rejection of claim 31 under 35 U.S.C. 112, first paragraph is withdrawn; Rejection of claim 31 under 35 U.S.C. 112, second paragraph has not been listed under the Grounds of Rejection to be Reviewed but has been separately argued.

WITHDRAWN REJECTIONS

The following grounds of rejection are not presented for review on appeal because they have been withdrawn by the examiner.

Claim 31 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

4,397,422	Gwyn	8-1983
5,501,397	Holt	3-1996
5,456,023	Farnan	10-1995

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim 31 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 31 recites, "...while not requiring the use of capillary tubes to create a pressure differential..." It is uncertain which of the following configurations is being claimed.

(1) The claim requires the apparatus itself to create a pressure differential but cannot have any capillary tube. What if a device creates a pressure differential and uses a capillary tube but the capillary tube itself does not created the pressure differential.

(2) The claim requires that the apparatus does not require a capillary tubes to directly cause the pressure differential.

(3) The claim allows the apparatus to have a capillary tube as long as it does not directly create a pressure differential.

If the apparatus is required to create a pressure differential, the metes and bounds of the negative limitation cannot be determined. It is uncertain what physical elements are being claimed to create the pressure differential. Additionally, the "pressure differential" appears to be a double inclusion of the "first pressure," "second pressure," "exit pressure," etc.

Claims 1-5, 7-10, 12-17, 19-21, 26-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gwyn (4,397,422) in view of Holt (5501,397).

Gwyn discloses an apparatus comprising:

a cavity comprising:

an inlet nozzle 17;

a throat region 19 having;

a first aperture 20 (aperture 20 for the white colorant);

a second aperture 20 (aperture 20 for the green colorant);

a third aperture 20 (for the red colorant);

an exit nozzle 15.

The pressure in the throat region 19 is lower than the inlet nozzle 17 because of the increase in flow rate that results from the decreased diameter of the throat region 19

compared to that of the inlet nozzle 17. The pressure in the exit nozzle 15 is lower than that of the throat region 19 because of the expansion of the flow that results from the diffuser effect of exit nozzle 15.

Gwyn does not disclose a chemical vapor deposition chamber where the apparatus is in fluid communication with the chamber.

Holt discloses chamber (spray booth No. 1, No. 2 and No. 3 in figures 1 and 5) having a spray gun 88 attached to the spray booth at ceiling 94 and in communication with the chamber. It would have been obvious to a person having ordinary skill in the art at the time of the invention to have provided a chamber to the device of Gwyn as taught by Holt to reduce dust contamination (as evidenced by Farnan, 5,456,023, column 3, lines 25-35).

The paint sprayed, as in the spray booth of Holt, is a chemical in vapor fluid form and is deposited on the painted surface. Therefore, the chamber literally meets the plain meaning of the term "chemical vapor deposition chamber." Neither the specification nor the claims limit the term "chemical vapor deposition chamber" to any particular definition.

In claim 13, the exit nozzle is considered to be the portion of throat region 19 downstream of aperture 20.

Claims 1,13 and 28 recite "adapted to" which merely requires the ability to so perform.

Claims 1, 13 and 28 recite "configured to" which merely requires the ability to so perform.

Claims 1, 13 and 28 recite "for" which merely recites the manner is which a claimed apparatus is intended to be employed and does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations.

While features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. MPEP 21114.

Claim 5 further defines the first and second chemical vapor deposition dopants comprising TEOS. In claim 1, the first and second chemical vapor deposition dopants are not positively recited. The dopants are merely recited as intended use of the first and second aperture of the throat region of the apparatus being claimed.

With respect to claims 2 and 14, Gwyn in view of Holt discloses the limitations of the claimed invention with the exception of the angle being forty to sixty degrees. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have provided an angle of forty to sixty degrees for optimization dependent of application criteria, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

With respect to claim 12, Gwyn in view of Holt discloses the limitations of the claimed invention with the exception of the angle being twenty to forty degrees. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have provided an angle of twenty to forty degrees for optimization dependent of application criteria, since it has been held that where the general conditions of a claim

are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

(10) Response to Argument

35 U.S.C. 103(a)

Claims 1, 5, 13, 17, 28 and 31

Appellant argues that the specification is replete with direct application to chemical vapor deposition for the semiconductor arts and quotes several portions of the specification. The specification fails to specifically indicate that the term "chemical vapor deposition chamber" should be interpreted in a specific manner when used in the claims. The specification merely describes chemical vapor deposition process in general. Based on appellant's argument, the entire specification should limit the claims, but do so is impermissible. Although the claims must be read in light of the specification, the specification cannot be imported into the claims.

Appellant argues that the references are non analogous art. Gwyn's spray device and Holt's spray booth are analogous art be they meet the plain meaning of the term "chemical vapor deposition."

Appellant argues that the cited art is not within the same field of endeavor as the semiconductor arts. "Semiconductor" is not a positively recited claim limitation. Claims 1, 13, 28 and 31 merely recite the intended use of the chemical vapor deposition chamber "for processing a semiconductor substrate."

Appellant argues that one of ordinary skill in the semiconductor art would limit the term "dopant" to a chemical vapor deposition process which does not include dyes or paints, as neither is a reactant that alters the properties of a pure substance. The term "dopant" is not a positively recited claim limitation. Claims 1, 13, 28 and 31 merely recite the intended use of the throat region "for injecting, respectively, a first and a second chemical vapor deposition dopant...."

Appellant argues that Holt would not support an obviousness type rejection because Holt's recirculation line would not work in a semiconductor fabrication process. Holt is relied on for the teaching of a chamber. Additionally, a "semiconductor" or a semiconductor fabrication process is not a positively recited claim limitation. Claims 1, 13, 28 and 31 merely recite the intended use of the chemical vapor deposition chamber "for processing a semiconductor substrate."

Appellant argues that Holt's booth does not have the capability of being used as a chemical vapor deposition chamber because a vacuum cannot be applied within the chamber. A "vacuum" is not a positively recited limitation. It is possible to deposit chemical vapor onto a substrate in a not vacuum environment.

Claims 29 and 30

The examiner relies on the response cited above.

Claims 1, 4, 13, 16, 28, 29, 30 and 31

Appellant argues that Gwyn does not disclose differing temperatures within the inlet chamber. The recitation "for atomization of said first and second chemical vapor deposition dopants" is indicates the intended use of the temperature. Each of Gwyn's

inlet nozzle 17 and throat region 19 has a temperature and atomization does occur in Gwyn's device. The claims neither require the first, second and third temperatures to be different nor define any special relationship between each of the termperatures.

Claims 5 and 17

Appellant argues that claims 5 and 17 define the first and second chemical vapor deposition dopants comprising TEOS. Claims 5 and 17 further define a non-positively recited limitation. Claims 1 and 13 do not positively recite the first and second chemical vapor deposition as limitations of the claimed invention. They are merely recited for intended use purpose of the throat region.

Claims 13 and 30

Appellant argues that Gwyn does not meet the limitations of claims 13 and 30 because chamber 21 has a larger diameter than throat region 19. For claims 13 and 30, the exit nozzle is considered to be the portion of throat region 19 downstream of aperture 20.

Regarding the remainder of appellant's argument, the examiner relies on the response cited above.

Claims 2, 12 and 14

The examiner relies on the response cited above.

Claims 3 and 5

Appellant argues that claims 3 and 15 require the throat region to be configured to operate at a critical Mach number of 1. Appellant further argues that the conditions for such a configuration is specified in the specification. The specification cannot be

imported into the claim limitations. Claims 3 and 15 require that the throat region be configured to operate at a critical Mach number of 1, i.e., has the ability to operate at Mach 1. Gwyn's device has the ability to operate at Mach 1 if fluid is pushed through Gwyn's device at Mach 1.

35 U.S.C. 112

Appellant argues that the apparatus does not require the use of capillary tubes to create a pressure differential because the narrow throat region provides the pressure differential. As cited above, the negative recitation "...while not requiring the use of capillary tubes to create a pressure differential..." has alternative possible interpretations that conflict with each other. Therefore, the metes and bounds of the claimed invention cannot be determined. Its is not at issue under prior art consideration because the cited prior art does not utilize a capillary tube.

(11) Related Proceeding(s) Appendix

Copies of the court or Board decision(s) identified in the Related Appeals and Interferences section of this examiner's answer are provided herein.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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